

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-002097**Date Inspected:** 08-Apr-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 1230**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2345**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China

CWI Name:	Zhu Zhong Hai, Jiang Jun Lin			CWI Present:	Yes	No	
Inspected CWI report:	Yes	No	N/A	Rod Oven in Use:	Yes	No	N/A
Electrode to specification:	Yes	No	N/A	Weld Procedures Followed:	Yes	No	N/A
Qualified Welders:	Yes	No	N/A	Verified Joint Fit-up:	Yes	No	N/A
Approved Drawings:	Yes	No	N/A	Approved WPS:	Yes	No	N/A
				Delayed / Cancelled:	Yes	No	N/A
Bridge No:	34-0006			Component:	Orthotropic Box Girder (OBG)/Tower		

Summary of Items Observed:

On this date, Caltrans Office of Structural Materials (OSM) Quality Assurance (QA) Inspector Edward Leach was present to randomly observe and document the welding and Quality Control (QC) functions performed by ZPMC personnel relative to the fabrication of SAS Superstructure project. While on site, the QA Inspector noted the following work.

New Tower Shop

The QA Inspector made periodic observations in the new tower shop and observed ZPMC personnel performing welding operations for various A709M, grade 345F tower skin plate assemblies and for a non-critical weld repair on skin plate A, pcmk-ESD1-SA107A/J-16A/16B. The QA Inspector observed the weld repair was being performed by ZPMC welding personnel Zhai Qing Shan (welder identification 058026) with the Shielded Metal Arc Welding (SMAW) process in the flat position (see digital photo below). The QA Inspector also noted the repair was for a 245mm long, 30mm wide by 30mm deep excavation where rejectable indications were previously found during ultrasonic testing (UT) by ZPMC QC personnel. It was also noted that ZPMC QC personnel Zhu Zhong Hai was using welding procedure specification (WPS)-345-SMAW-1G for this repair. The QA Inspector also observed the QC Inspector using a 160 degree Celsius temperature marker (Tempilstik) to verify the pre-heat temperature during welding. The pre-heat temperature appeared to melt at approximately 160 degrees Celsius when verified with the marker. The pre-heat was maintained during welding by electric heating coil resistance bands that were positioned on both the opposite and the same side of the plate as the welding. The QA Inspector also observed ZPMC personnel using a rose bud torch to apply additional heat when necessary (see digital photo below). The QA Inspector performed a random verification of the welding current observing approximately 176 amperes as the welding continued. The recorded welding parameter appeared to comply with the WPS mentioned

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above. The welder was also observed using proper interpass cleaning procedures with a slag hammer and wire brush.

Also in the new tower shop during this observation, the QA Inspector observed ZPMC personnel performing heat straightening procedures (HSR) on table 2 for a total of fifteen skin plates. The QA Inspector noted ZPMC personnel using procedure HSR (T)-243 with 650 degree Celsius as the maximum temperature. The work observed in this shop appeared to be in general compliance with the contract specifications.

Bay 1

The QA Inspector was provided with information by swing shift QA Inspector Steve Hall regarding fabrication and welding procedures for the closed rib deck plate assemblies. The Hall also briefed the QA Inspector about the welding procedure specifications and the inspection criteria that is used on both the production monitoring tests (PMT) and the actual production pieces.

Later in the shift, the QA Inspector assisted QA Inspector Eric Prue with UT calibrations and UT for the partial joint penetration (PJP) welds on the top deck panel designation DP139-001. This deck panel consists of five (5ea) closed rib assemblies for a total of ten (10ea) PJP welds. At this time, the QA Inspector observed that ZPMC UT personnel had completed their 15% UT inspection on these welds. This QA Inspector, along with Mr. Prue also completed 15% UT over the same areas ZPMC completed to verify the UT was completed to the contract specifications. Once completed, the QA Inspector assisted Mr. Prue with documenting and mapping each rejectable indication that was found. The information regarding these results will be documented on a UT report generated by QA Inspector Eric Prue.



Summary of Conversations:

As noted above in report.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By: Leach,Ed

Quality Assurance Inspector

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Reviewed By: Hager,Craig

QA Reviewer